

**IN THE CLAIMS**

Please amend the claims as follows:

1-32. (Canceled)

33. (New) A method for delivering cardiac resynchronization therapy, comprising:  
varying the values of one or more resynchronization pacing parameters while measuring an intrinsic atrial rate;  
extracting a feature from an electrogram signal; and,  
setting one or more resynchronization pacing parameters based one or both of the feature extracted from an electrogram signal and the value of a resynchronization pacing parameter which tends to reduce the intrinsic atrial rate.

34. (New) The method of claim 33 wherein the one or more resynchronization pacing parameters include an AV delay interval.

35. (New) The method of claim 33 wherein the one or more resynchronization pacing parameters include an LV offset for biventricular pacing.

36. (New) The method of claim 33 wherein the one or more resynchronization pacing parameters include a resynchronization pacing mode.

37. (New) The method of claim 33 wherein the one or more resynchronization pacing parameters include which of the ventricles should be paced.

38. (New) The method of claim 33 wherein the feature extracted from an electrogram signal relates to the time required for the ventricles to depolarize during an intrinsic beat.

39. (New) The method of claim 38 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is a QRS width.

40. (New) The method of claim 38 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is whether the width of the QRS complex exceeds 160 milliseconds.

41. (New) The method of claim 38 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is a time difference between right and left ventricular senses.

42. (New) The method of claim 33 wherein the feature extracted from an electrogram signal is the length of a PR interval.

43. (New) A system, comprising:

an implantable pulse generator for delivering resynchronization pacing therapy;

wherein the pulse generator is programmed to vary the values of one or more resynchronization pacing parameters while measuring an intrinsic atrial rate;

a controller programmed to extract a feature from an electrogram signal; and,

wherein the controller is further programmed to select one or more optimum values of resynchronization pacing parameters based one or both of the feature extracted from an electrogram signal and the value of a resynchronization pacing parameter which tends to reduce the intrinsic atrial rate.

44. (New) The system of claim 43 wherein the one or more resynchronization pacing parameters include an AV delay interval.

45. (New) The system of claim 43 wherein the one or more resynchronization pacing parameters include an LV offset for biventricular pacing.

46. (New) The system of claim 43 wherein the one or more resynchronization pacing parameters include a resynchronization pacing mode.

47. (New) The system of claim 43 wherein the one or more resynchronization pacing parameters include which of the ventricles should be paced.

48. (New) The system of claim 43 wherein the feature extracted from an electrogram signal relates to the time required for the ventricles to depolarize during an intrinsic beat.

49. (New) The system of claim 48 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is a QRS width.

50. (New) The system of claim 48 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is whether the width of the QRS complex exceeds 160 milliseconds.

51. (New) The system of claim 48 wherein the feature extracted from an electrogram signal which relates to the time required for the ventricles to depolarize during an intrinsic beat is a time difference between right and left ventricular senses.

52. (New) The system of claim 43 wherein the feature extracted from an electrogram signal is the length of a PR interval.